

BRYCEN GRAY AND BEN PRICE COVID-19 COGNITIVE
RESEARCH ACT

JUNE 15, 2022.—Committed to the Committee of the Whole House on the State of
the Union and ordered to be printed

Ms. JOHNSON of Texas, from the Committee on Science, Space, and
Technology, submitted the following

R E P O R T

[To accompany H.R. 7180]

The Committee on Science, Space, and Technology, to whom was referred the bill (H.R. 7180) to authorize the Director of the National Science Foundation to award grants to support research on the disruption of regular cognitive processes associated with COVID-19 infection, and for other purposes, having considered the same, reports favorably thereon without amendment and recommends that the bill do pass.

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II. PURPOSE OF THE BILL

The purpose of the bill is to provide for multidisciplinary research at the National Science Foundation on the disruption of regular cognitive processes associated with COVID-19 infection.

III. BACKGROUND AND NEED FOR THE LEGISLATION

Preliminary research indicates that as many as 1 in 3 COVID-19 survivors experience a cognitive impairment following their acute infection. While anxiety, mood, and brain fog are among the most common symptoms, researchers have also uncovered a prevalence of serious complications such as psychosis, dementia, and brain hemorrhages. Despite the significant progress made by researchers to increase our understanding of COVID-19, it remains unclear how the virus alters brain function, who is most at risk, and what can be done to improve our ability support impacted patients.

The *Brycen Gray and Ben Price COVID-19 Cognitive Research Act*, introduced by Representatives Anthony Gonzalez, Adam Kinzinger, Susan Wild, Tony Cárdenas, Peter Meijer, Scott Peters, David Joyce, and Bob Gibbs, authorizes the National Science Foundation to award grants on a competitive basis to support interdisciplinary research on the disruption of regular cognitive processes associated with both short-term and long-term COVID-19 infections. NSF would solicit proposals for foundational studies on the effects of cognition, emotion, and neural structure and function related to COVID-19 infections, developing new tools to evaluate cognitive disruptions related to COVID-19, and examining the relevance of psychological and psychosocial factors. In addition, the bill tasks the National Academies of Sciences, Engineering, and Medicine to study and produce a report on the disruption of cognitive processes associated with COVID-19 infection.

This legislation is named in honor of Brycen Gray and Ben Price, who were constituents of Rep. Gonzalez and Rep. Kinzinger. Despite having no history of mental illness prior to their COVID-19 infections, each suffered from severe cognitive effects and tragically took their own lives.

IV. COMMITTEE CONSIDERATION AND VOTES

On March 21, 2022, Representative Anthony Gonzalez, Representative Adam Kinzinger, and Representative Susan Wild introduced H.R. 7180, the *Brycen Gray and Ben Price COVID-19 Cognitive Research Act*. The bill was referred to the House Committee on Science, Space, and Technology.

On May 17, 2022, the Committee on Science, Space, and Technology met to consider H.R. 7180. No amendments to the bill text were offered. Acting Chairwoman Zoe Lofgren moved that the Committee favorably report the bill, H.R. 7180, to the House with the recommendation that the bill be approved. *The motion was agreed to by a voice vote.*

V. SUMMARY OF MAJOR PROVISIONS OF THE BILL

The Act directs the National Science Foundation to support the interdisciplinary research on the disruption of regular cognitive

processes associated with both short and long-term COVID–19 infections.

The bill also directs the National Science Foundation to enter into an agreement with the National Academies of Sciences, Engineering, and Medicine for a study that includes an evaluation of the disruption of cognitive processes associated with COVID–19 infection.

The legislation authorizes \$10,000,000 for fiscal years 2023 through 2025 to the National Science Foundation to implement the bill. Of these funds, \$1,000,000 is directed to be used to carry out the National Academies study.

VI. SECTION-BY-SECTION ANALYSIS (BY TITLE AND SECTION)

Section 1. Short title

Brycen Gray and Ben Price COVID–19 Cognitive Research Act

Section 2. Definitions

Definitions for “Director”, “National Academies”, and “eligible entities”.

Section 3. Findings

This section highlights the need for additional research on the mental health effects of COVID–19, and the important role that the National Science Foundation can play through basic research.

Section 4. National Science Foundation Research

This section directs the National Science Foundation to award grants to institutions of higher education and nonprofit organizations to conduct interdisciplinary research on the disruption of regular cognitive processes by a COVID–19 infection.

It further details that this research may include foundational studies on the effects of a COVID–19 infection, analysis of findings including the development of a predictive framework, development of tools to evaluate the structure and function of the brain resulting from a COVID–19 infection, studies on the relevance of psychological and psychosocial factors associated with the COVID–19 pandemic, and any other activities that the Director of the National Science Foundation determines will support the interdisciplinary research on the disruption of regular cognitive processes associated with COVID–19.

Section 5. National Academy study on the disruption of cognitive processes associated with COVID–19 infection

This section directs the National Science Foundation to enter into an agreement with the National Academies of Sciences, Engineering, and Medicine for a study that includes an evaluation of the disruption of cognitive processes associated with COVID–19 infection. The study shall include: a review of research literature to identify research gaps, an assessment of the necessity of establishing causal inference approaches on the impacts of COVID–19, an evaluation on the coordination of research data collection, and an evaluation on the impacts of COVID–19 on underrepresented populations. Additionally, the study should make recommendations on ways to coordinate engagement with researchers and stake-

holders to ensure best practices and information are being shared among stakeholders.

The final report is required no longer than 16 months after the date of enactment. The Director shall then submit to Congress information about any plans to implement recommendations in the study.

Section 6. Authorization of appropriations

This section authorizes \$10,000,000 for fiscal years 2023 through 2025 to the National Science Foundation to implement the bill. Of these funds, \$1,000,000 is directed to be used to carry out the National Academies study in Section 5.

VII. COMMITTEE VIEWS

The intent of this legislation is to improve the understanding of COVID-19's cognitive impact, particularly as it relates to mental health. Since the beginning of the COVID-19 pandemic, researchers in both the public and private sectors have been working to improve the understanding of the effects and impacts of COVID-19. The Committee believes this bill addresses important aspects of that analysis: looking at the mental health implications of COVID-19 and researching ways that the disease may impact the neurological functions of cognition.

The Committee has worked with the National Science Foundation to learn more about the research and work being done on this topic and believes this legislation would help to bring emphasis to this topic as an area of study, including through the Foundation's funding of awards through the RAPID response mechanism. Additionally, the Committee believes that the bill will provide an opportunity to further inform the public on biological effects of COVID-19 infections that may last for a long period of time and beyond initial symptoms of the infection.

The Committee intends for the report conducted by the National Academies of Sciences, Engineering, and Medicine to further inform the research being done through the National Science Foundation, and other sources, and to provide perspective on research gaps. The Committee believes the National Academies' report will play an important role in informing local stakeholders who may be working on these issues at a grassroots level and help to suggest best practices and solutions for individuals with a disruption of cognitive processes due to COVID-19. The Committee intends that the recommendations included in the report be seriously considered by the National Science Foundation Director in creating plans to conduct future research on this topic.

VIII. COST ESTIMATE

Pursuant to clause 3(c)(2) of rule XIII of the Rules of the House of Representatives, the Committee adopts as its own the estimate of new budget authority, entitlement authority, or tax expenditures or revenues contained in the cost estimate prepared by the Director of the Congressional Budget Office pursuant to section 402 of the Congressional Budget Act of 1974.

IX. CONGRESSIONAL BUDGET OFFICE COST ESTIMATE

No Congressional Budget Office Cost Estimate at the time of report filing.

X. FEDERAL MANDATES STATEMENT

H.R. 7180 contains no unfunded mandates.

XI. COMMITTEE OVERSIGHT FINDINGS AND RECOMMENDATIONS

The Committee's oversight findings and recommendations are reflected in the body of this report.

XII. STATEMENT ON GENERAL PERFORMANCE GOALS AND OBJECTIVES

Pursuant to clause 3(c) of House rule XIII, the goal of H.R. 7180 is to provide for research and development on the disruption of regular cognitive processes associated with COVID-19 infection.

XIII. FEDERAL ADVISORY COMMITTEE STATEMENT

H.R. 7180 does not create any advisory committees.

XIV. DUPLICATION OF FEDERAL PROGRAMS

Pursuant to clause 3(c)(5) of rule XIII of the Rules of the House of Representatives, the Committee finds that no provision of H.R. 7180 establishes or reauthorizes a program of the federal government known to be duplicative of another federal program, including any program that was included in a report to Congress pursuant to section 21 of Public Law 111-139 or the most recent Catalog of Federal Domestic Assistance.

XV. EARMARK IDENTIFICATION

Pursuant to clause 9(e), 9(f), and 9(g) of rule XXI, the Committee finds that H.R. 7180 contains no earmarks, limited tax benefits, or limited tariff benefits.

XVI. APPLICABILITY TO THE LEGISLATIVE BRANCH

The Committee finds that H.R. 7180 does not relate to the terms and conditions of employment or access to public services or accommodations within the meaning of section 102(b)(3) of the Congressional Accountability Act (Public Law 104-1).

XVII. STATEMENT ON PREEMPTION OF STATE, LOCAL, OR TRIBAL LAW

This bill is not intended to preempt any state, local, or tribal law.

XVIII. PROCEEDINGS OF THE FULL COMMITTEE MARKUP

**MARKUPS: H.R. 7180, THE BRYCEN GRAY AND
BEN PRICE COVID-19 COGNITIVE RESEARCH
ACT; H.R. 7289, THE FEDERAL PFAS RE-
SEARCH EVALUATION ACT; H.R. 7361, THE
NATIONAL WEATHER SERVICE COMMUNICA-
TIONS IMPROVEMENT ACT; H.R. 7569, THE
ENERGY CYBERSECURITY UNIVERSITY
LEADERSHIP ACT OF 2022**

MARKUP

BEFORE THE

COMMITTEE ON SCIENCE, SPACE,
AND TECHNOLOGY

HOUSE OF REPRESENTATIVES

ONE HUNDRED SEVENTEENTH CONGRESS

SECOND SESSION

MAY 17, 2022

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**H.R. 7569, THE ENERGY CYBERSECURITY
UNIVERSITY LEADERSHIP ACT OF 2022**

**H.R. 7361, THE NATIONAL WEATHER SERVICE
COMMUNICATIONS IMPROVEMENT ACT**

**H.R. 7289, THE FEDERAL PFAS RESEARCH
EVALUATION ACT**

**H.R. 7180, THE BRYCEN GRAY AND BEN PRICE
COVID-19 COGNITIVE RESEARCH ACT**

TUESDAY, MAY 17, 2022

HOUSE OF REPRESENTATIVES,
COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY,
Washington, D.C.

The Committee met, pursuant to notice, at 12:30 p.m., in room 2318, Rayburn House Office Building, Hon. Eddie Bernice Johnson [Chairwoman of the Committee] presiding.

Chairwoman JOHNSON. Good morning—or afternoon. The Committee will come to order. And without objection, the Chair is authorized to declare a recess at any time.

Pursuant to Committee rule II(e) and House rule XI, the Chair announces that roll call votes may be postponed.

Today, the Committee is meeting both in person and virtually, and I want to announce a couple reminders to Members about the conduct of the hearing. First, Members and staff who are attending in person may choose to be masked, but it is not a requirement. However, any individuals with symptoms, a positive test, or exposure to someone with COVID-19 should wear a mask while present.

Members who are attending virtually should keep their video feed on as long as they are present in the meeting. Members are responsible for their own microphones. Please keep your microphones muted unless you are speaking.

And finally, if Members have documents they wish to submit for the record, please email them to the Committee Clerk, whose email address was circulated prior to the meeting.

Pursuant to the notice, the Committee meets to consider the following measures: H.R. 7569, the *Energy Cybersecurity University*

Leadership Act of 2022; H.R. 7361, the *National Weather Service Communications Improvement Act*; H.R. 7289, the *Federal PFAS Research Evaluation Act*; and H.R. 7180, the *Brycen Gray and Ben Price COVID-19 Cognitive Research Act*.

Let me say good afternoon and welcome to today's markup of four good bipartisan bills. I know it's a busy day, and I will be brief. The first bill we're considering is the *Energy Cybersecurity University Leadership Act of 2022*, which was introduced by Representative Ross. This legislation would authorize the Secretary of Energy to provide financial assistance to graduate students and postdoctoral researchers pursuing coursework at the intersection of cybersecurity and energy infrastructure. The ultimate aim of this act is to contribute to the development of a diverse, inclusive, and highly skilled work force with the knowledge and expertise required for integrating cybersecurity considerations into the research, design, and development of new energy infrastructure. I urge my colleagues to join me in supporting this crucial legislation.

The next bill we will consider is the *National Weather Service Communications Improvement Act*, a bipartisan bill introduced by Randy Feenstra. Reliable communication is critical during weather events. It is vitally important to ensure that National Weather Service (NWS) employees can communicate without difficulty or delay. This bill will upgrade National Weather Service communications systems to bring them into the 21st century. This is a good bill, and I urge its adoption.

Next, we will consider the *Federal PFAS Research Evaluation Act*. This bipartisan bill was introduced by Representative Lizzie Fletcher. The PFAS compounds are found in many common products such as firefighting foam, cookware, and packaging. However, there is still a lot we do not understand about these chemicals. This bill would help to address knowledge gaps in our understanding on various topics. This bill directs the EPA (Environmental Protection Agency) Administrator to enter into an agreement with the National Academies of Sciences, Engineering, and Medicine to conduct a series of studies to identify the research and development needed to improve the understanding. The bill also requires the Director of the Office of Science and Technology Policy to submit an implementation plan for Federal research and development activities. We must continue to deepen our understanding of these substances, and this bill will help us get there. This is a good bipartisan bill, and I urge my colleagues to support it.

The final bill for today's markup was introduced by Representative Gonzalez. It is the *Brycen Gray and Ben Price COVID-19 Cognitive Research Act*. While the fog of the COVID-19 pandemic is beginning to clear, we are all eager to resume something resembling normalcy. Many COVID-19 survivors, however, are still suffering. Early research results indicate that a COVID-19 infection may leave individuals with an increased risk of developing mental health conditions. And they may be at an increased risk of death by suicide and drug overdose. While researchers are raising alarms about these risks, improved data collection and additional research are needed to better understand the mental health implications of a COVID-19 infection. This bill directs the National Science Foun-

dation (NSF) to rally the research community to take on this task. I urge my colleagues to support this important bill.

And I want to thank my colleagues for participating in today's markup, and I want to give a special thanks to my most efficient and my special friend Representative Lofgren, who will be taking the gavel for me today.

[The prepared statement of Chairwoman Johnson follows:]

Hello, and welcome to today's markup of four good bipartisan bills. I know it's a busy day, so I will be brief.

The first bill we are considering is the *Energy Cybersecurity University Leadership Act of 2022*, which was introduced by Representative Ross. This legislation would authorize the Secretary of Energy to provide financial assistance for graduate students and postdoctoral researchers pursuing coursework at the intersection of cybersecurity and energy infrastructure. The ultimate aim of this act is to contribute to the development of a diverse, inclusive, and highly skilled workforce with the knowledge and expertise required for integrating cybersecurity considerations into the research, design, and development of new energy infrastructure. I urge my colleagues to join me in supporting this crucial legislation.

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The bill also requires the Director of the Office of Science and Technology Policy to submit an implementation plan for federal PFAS research and development activities. We must continue to deepen our understanding of PFAS substances, and this bill will help us get there. This is a good bipartisan bill, and I urge my colleagues to support it.

The final bill for today's markup was introduced by Representative Gonzalez. It is the *Brycen Gray and Ben Price COVID-19 Cognitive Research Act*. While the fog of the COVID-19 pandemic is beginning to clear and we are all eager to resume something resembling normalcy, many COVID-19 survivors are still suffering. Early research results indicate that a COVID-19 infection may leave individuals with an increased risk of developing mental health conditions. And they may be at an increased risk of death by suicide and drug overdose. While researchers are raising alarms about these risks, improved data collection and additional research are needed to better understand the mental health implications of a COVID-19 infection. This bill directs the National Science Foundation to rally the research community to take on this task. I urge my colleagues to support this important bill.

I want to thank my colleagues for participating in today's markup. And I want to give a special thanks to my friend Representative Lofgren who will be taking the gavel for me today.

With that I now recognize the Ranking Member to present his opening remarks.

Chairwoman JOHNSON. With that, I recognize our Ranking Member to present his opening remarks.

Mr. LUCAS. Thank you, Chairwoman Johnson, for holding today's hearing, markup of bipartisan environment, research, and cyber bills. First up is H.R. 7569, the *Energy Cybersecurity University Leadership Act of 2022*. It's never been more critical to ensure the cybersecurity of our Nation's energy sector. In recent months, our liquefied natural gas industry has faced numerous cyberattacks by Russian actors. And in March, the President and FBI (Federal Bureau of Investigation) warned us of credible threats to our energy

infrastructure. The Department of Energy plays a central role in safeguarding this infrastructure and has launched some new initiatives recently to address these issues.

That's why Ranking Member Weber and I recently wrote to Secretary Granholm to ask for more information about the Department's work in this area. H.R. 7569 is one more avenue to strengthen our energy cybersecurity. This legislation directs the Secretary of Energy to establish a program to provide financial assistance to graduate students and postdoctoral researchers pursuing work related to cybersecurity and energy infrastructure. The program will also provide them with valuable research traineeship experiences at the national laboratories and utilities.

Additionally, the bill ensures that we are connecting with students across the country by conducting outreach to historically Black colleges and universities (HBCUs), tribal colleges or universities, and minority-serving institutions. This is important legislation that will help address expanding vulnerabilities in our energy-related critical infrastructure by strengthening the next generation of our energy cybersecurity force.

Next, we'll have H.R. 7361, the *National Weather Service Communication Improvement Act*. The National Weather Service uses an instant messaging system, also known as NWS Chat, to communicate quickly with forecast offices and emergency officials. NWS Chat is a legacy, web-based system developed internally by NWS decades ago. In recent years, it's experienced failures during severe weather events when a large number of users log in at once.

After the last 2 years of remote and hybrid work, I'm sure all of us know just how frustrating it is when communications go down during our busiest times. But when NWS Chat goes down, it doesn't just delay our debates on bills, it can endanger lives. Living in Tornado Alley, I am very familiar with how quickly storms can form and change direction. Every second counts during weather emergencies, and we cannot afford a failing system.

This bill authorizes the Weather Service to upgrade to a commercial off-the-shelf solution. Not only will it improve reliability, but it will also allow NWS to take advantage of continuous technology upgrades. And I'd like to thank Ranking Member Feenstra for introducing this bill.

The next bill before us is H.R. 7289, the *Federal PFAS Research Evaluation Act*. PFAS refers to a large group of high-strength, highly durability chemicals used in industry and consumer products. Because of their durability, they don't break down easily and last a long time in the environment. In some instances, that creates hazards to human health.

This bill addresses that by directing the Environmental Protection Agency to enter into an agreement with the National Academies to conduct two studies. The first is to better understand human exposure and behavior and toxicity of PFAS. It will allow us to better address research and knowledge gaps in Federal research as identified by the National Academies in 2020. The second study is focused on understanding the extent and implications of PFAS contamination, as well as research needed to manage and treat contamination, and develop safe alternatives. Together, these

studies will help us better address PFAS using the best available science.

Finally, we'll consider Representative Gonzalez's bill, H.R. 7180, the *Brycen Gray and Ben Price COVID-19 Cognitive Research Act*. The bill is named for two men who died by suicide after suffering neurological problems caused by COVID-19. Tragically, there have been many numerous instances of psychosis developed—developing after COVID illnesses. This neurological disease is not well-understood, and this bill will help change that.

The bill directs NSF to support research on the long-term mental health effects of COVID, particularly in adolescents. It also instructs the NSF to commission a National Academies study on the disruption of cognitive processes associated with COVID. Research on mental health issues associated with COVID has been progressing as we continue to learn more about the long-term effects of the disease. This bill will help accelerate these efforts to better inform the public and medical community. And hopefully, it will prevent more tragic deaths.

I'd like to thank Representative Gonzalez for his work on this important issue, and I look forward to getting this bill and the others on the docket today passed into law quickly.

I yield back the balance of my time, Madam Chair.

[The prepared statement of Mr. Lucas follows:]

Thank you, Chairwoman Johnson, for holding today's markup of bipartisan environment, research, and cybersecurity bills.

First up is H.R. 7569, the *Energy Cybersecurity University Leadership Act of 2022*. It's never been more critical to ensure the cybersecurity of our nation's energy sector. In recent months, our liquefied natural gas (LNG) industry has faced numerous cyberattacks by Russian actors. And in March, the President and FBI warned us of credible threats to our energy infrastructure.

The Department of Energy plays a central role in safeguarding this infrastructure and has launched some new initiatives recently to address these issues. That's why Ranking Member Weber and I recently wrote to Secretary Granholm to ask for more information about the Department's work in this area.

H.R. 7569 is one more avenue to strengthen our energy cybersecurity. This legislation directs the Secretary of Energy to establish a program to provide financial assistance to graduate students and postdoctoral researchers pursuing work related to cybersecurity and energy infrastructure.

The program will also provide them with valuable research traineeship experiences at the National Laboratories and utilities. Additionally, the bill ensures we are connecting with students across the country by conducting outreach to historically Black colleges and universities, Tribal Colleges or Universities, and minority-serving institutions.

This is important legislation that will help address expanding vulnerabilities in our energy-related critical infrastructure by strengthening the next generation of our energy cybersecurity workforce.

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NWS Chat is a legacy, web-based system developed internally by NWS decades ago. In recent years, it has experienced failures during severe weather events when a large number of users log in at once.

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The first is to better understand human exposure, behavior, and toxicity of PFAS. It will allow us to better address research and knowledge gaps in federal research as identified by the National Academies in 2020.

The second study is focused on understanding the extent and implications of PFAS contamination, as well as research needed to manage and treat contamination, and develop safe alternatives. Together, these studies will help us better address PFAS using the best available science.

Finally, we'll consider Rep. Gonzalez's bill, H.R. 7180, the *Brycen Gray and Ben Price COVID-19 Cognitive Research Act*.

The bill is named for two men who died by suicide after suffering neurological problems caused by COVID-19. Tragically, there have been numerous instances of psychosis developing after COVID illnesses. This neurological disease is not well understood, and this bill will help to change that.

The bill directs NSF to support research on the long-term mental health effects of COVID, particularly in adolescents. It also instructs NSF to commission a National Academies study on the disruption of cognitive processes associated with COVID.

Research on mental health issues associated with COVID has been progressing as we continue to learn more about the long-term effects of the disease. This bill will help accelerate these efforts, to better inform the public and medical community. And hopefully, it will prevent more tragic deaths.

I'd like to thank Rep. Gonzalez for his work on this important issue and I look forward to getting this bill and the others on the docket today passed into law quickly.

I yield the balance of my time.

Ms. LOFGREN [presiding]. The gentleman yields back. Other Members are invited to put opening statements into the record.

117TH CONGRESS
2D SESSION

H. R. 7180

To authorize the Director of the National Science Foundation to award grants to support research on the disruption of regular cognitive processes associated with COVID-19 infection, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

MARCH 21, 2022

Mr. GONZALEZ of Ohio (for himself, Mr. KINZINGER, Ms. WILD, Mr. CÁRDENAS, Mr. MELJER, Mr. PETERS, Mr. JOYCE of Ohio, and Mr. GIBBS) introduced the following bill; which was referred to the Committee on Science, Space, and Technology

A BILL

To authorize the Director of the National Science Foundation to award grants to support research on the disruption of regular cognitive processes associated with COVID-19 infection, and for other purposes.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*

3 **SECTION 1. SHORT TITLE.**

4 This Act may be cited as the “Brycen Gray and Ben
5 Price COVID-19 Cognitive Research Act”.

6 **SEC. 2. DEFINITIONS.**

7 In this Act—

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2

1 (1) the term “Director” means the Director of
2 the National Science Foundation;

3 (2) the term “National Academies” means the
4 National Academies of Science, Engineering, and
5 Medicine; and

6 (3) the term “eligible entity” means an institu-
7 tion of higher education (as such term is defined in
8 section 102 of the Higher Education Act of 1965
9 (20 U.S.C. 1002)) or a consortium composed of non-
10 profit organizations and institutions of higher edu-
11 cation.

12 **SEC. 3. FINDINGS.**

13 Congress makes the following findings:

14 (1) The COVID–19 pandemic has disrupted
15 nearly every aspect of life across the globe. Further-
16 more, it has produced major disruptions of individ-
17 ual’s physical and mental health, including with re-
18 spect of children and adolescents.

19 (2) Historical epidemiological perspectives sug-
20 gest an association between exposure to general res-
21 piratory viruses and subsequent disruption of reg-
22 ular cognitive processes.

23 (3) Early research suggests that one in three
24 individuals diagnosed with a COVID–19 infection

1 experiences a disruption of regular cognitive proc-
2 esses within six months of such diagnosis.

3 (4) Research is urgently needed to better un-
4 derstand why disruption in regular cognitive proc-
5 esses occur in patients as a consequence of a
6 COVID-19 infection and how long such disruptions
7 can continue after recovery.

8 (5) The National Science Foundation has a
9 deep history of supporting interdisciplinary, basic re-
10 search that spans the social, behavioral, and funda-
11 mental biological sciences and paves the way for sci-
12 entific advancements.

13 **SEC. 4. NATIONAL SCIENCE FOUNDATION RESEARCH.**

14 The Director shall award grants to eligible entities,
15 including through the RAPID funding mechanism, on a
16 competitive, merit-reviewed basis to support interdiscipli-
17 nary research on the disruption of regular cognitive proc-
18 esses associated with both short-term and long-term
19 COVID-19 infections, including with respect to children
20 and adolescents. Such research may include the following:

21 (1) Foundational studies on the effects of cog-
22 nition, emotion, and neural structure and function
23 relating to any disruption of regular cognitive proc-
24 esses associated with COVID-19 infection.

1 (2) Analysis of findings on the disruption of
2 regular cognitive processes associated with COVID–
3 19 infection, including the development of predictive
4 theoretical frameworks to guide future research.

5 (3) Development of physical and conceptual
6 tools needed to evaluate cognition, emotion, and neu-
7 ral structure and function of the brain as a con-
8 sequence of a COVID–19 infection, and the potential
9 relevance of such infection to the disruption of reg-
10 ular cognitive processes.

11 (4) Studies on the relevance of psychological
12 and psychosocial factors, including major disruptions
13 of physical health, mental health, and economic sta-
14 bility associated with the COVID–19 pandemic, on
15 the disruption of regular cognitive processes, includ-
16 ing an identification and evaluation of such factors.

17 (5) Any other activities the Director determines
18 will support interdisciplinary research and collabora-
19 tion on the disruption of regular cognitive processes
20 associated with COVID–19 infection, including with
21 respect to children and adolescents.

22 **SEC. 5. NATIONAL ACADEMIES STUDY ON THE DISRUPTION**
23 **OF COGNITIVE PROCESSES ASSOCIATED**
24 **WITH COVID–19 INFECTION.**

25 (a) STUDY.—

1 (1) IN GENERAL.—Not later than 45 days after
2 the date of the enactment of this Act, the Director
3 shall enter into an agreement with the National
4 Academies to study and produce a report on the dis-
5 ruption of cognitive processes associated with
6 COVID-19 infection. The study shall—

7 (A) review the research literature and iden-
8 tify research gaps regarding Federal programs
9 and activities with roles in addressing both
10 short-term and long-term consequences associ-
11 ated with COVID-19 infection;

12 (B) assess the necessity of establishing
13 causal inference approaches into research on
14 the impacts of COVID-19 infection on cognitive
15 processes to determine reverse causation;

16 (C) evaluate and make recommendations
17 regarding the coordination of research and data
18 collection, including with respect to children
19 and adolescents, to identify the disruption of
20 regular cognitive processes associated with
21 COVID-19 infection, including long-term
22 COVID-19;

23 (D) evaluate impacts of COVID-19 infec-
24 tion on populations under-represented in cog-

1 nitive literature, such as poor, rural, and minor-
2 ity populations; and

3 (E) make recommendations regarding ways
4 to coordinate engagement with researchers and
5 stakeholders from universities, industry, public
6 health organizations, State and local govern-
7 ments, elementary and secondary educational
8 organizations, and non-profit organizations to
9 ensure that research, information, and best
10 practices relating to the disruption of regular
11 cognitive processes associated with COVID-19
12 infection, including long-term COVID-19, are
13 shared among such entities.

14 (2) COMPLETION.—The study required under
15 paragraph (1) shall be completed by not later than
16 the date that is 16 months after the date of the en-
17 actment of this Act.

18 (b) REPORTS.—

19 (1) BY THE NATIONAL ACADEMIES.—Upon
20 completion of the study under subsection (a), the
21 National Academies shall transmit to the Director
22 and Congress a report on such study.

23 (2) BY THE DIRECTOR.—Not later than three
24 months after receipt of the report under paragraph
25 (1), the Director shall transmit to Congress a sum-

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1 mary of the Director's plans, if any, to implement
2 the recommendations of the National Academies
3 contained in such report.

4 **SEC. 6. AUTHORIZATION OF APPROPRIATIONS.**

5 There is authorized to be appropriated to the Direc-
6 tor to carry out this Act \$10,000,000 for fiscal year 2023,
7 to remain available through fiscal year 2025, of which
8 \$1,000,000 is authorized to carry out the study and
9 produce the reports under section 5.

○

Ms. LOFGREN. Without objection, the bill is considered as read and open to amendment at any point.

Does anyone wish to be recognized to speak on the underlying measure?

Mr. Gonzalez, you are recognized to strike the last word.

Mr. GONZALEZ. Thank you, Madam Chair and Ranking Member Lucas, for holding this markup today. I urge all my colleagues to support my legislation, the *Brycen Gray and Ben Price COVID-19 Cognitive Research Act*.

I was proud to introduce this legislation, alongside my friends Ms. Wild and Mr. Meijer, and would like to thank each of them for their leadership on this issue.

Also, I want to thank the majority and minority staff for working with my team, as well as stakeholders, including the American Foundation for Suicide Prevention and the Children Hospitals Association, for supporting this legislation.

Adored by his parents Shawn and Tara, as well as his brothers Ricky and Patrick, Brycen Gray was a 17-year-old young man from my district in northeast Ohio, passed away just a little over a year ago. Dubbed a comedian by his friends and family, Brycen was funny, quick-witted, and capable of inspiring the kind of laughter that makes you cry. He was a loving, charismatic, and selfless individual, always putting the needs of others ahead of his own.

A loving husband to his wife Jennifer and devoted father to two amazing children, Ben Price was a 48-year-old business owner and farmer from Illinois who died in early 2021. Ben's life revolved around his family, friends, and numerous passions, which included forming the special connections of Grundy County, whose mission is to connect people with disabilities like their beloved son Jett to their community. He led by example and loved without reservation.

Both Brycen and Ben tragically passed after battles with long COVID. Despite having no history of mental illness, each of them began battling symptoms such as anxiety, panic, and paranoia. The disease took Brycen and Ben from two of the healthiest, most vibrant people you could find to individuals so debilitated that they could not bear to live another day. While they fought to the bitter end, each chose to end their pain.

Following Brycen's death, his family reached out to me to share his story. Without question, it was the most difficult conversation I've had in my time in Congress. I made a promise to his family then that the top priority of my office and my remaining time in Congress would be to do everything in my power to support efforts to find answers for their son's death and improve our understanding of COVID-19's impact on the brain.

The legislation before us today is the culmination of those efforts. What we found thus far is that as many as one in three COVID-19 survivors experience a cognitive impairment following their acute infection. More alarming, nearly one in eight COVID-19 survivors are diagnosed with an illness for the first time. While anxiety, mood, and brain fog are among the most common symptoms, researchers have also uncovered a prevalence of serious complications such as psychosis, dementia, and brain hemorrhages. Despite the significant progress made by researchers to improve our understanding, it remains unclear how the virus alters brain function,

who is most at risk, and what can be done to quickly diagnose and treat impacted patients.

The *Brycen Gray and Ben Price COVID-19 Cognitive Research Act* aims to close those research gaps by accelerating our research efforts. Specifically, it authorizes the NSF to award grants on a competitive basis to support interdisciplinary research on the disruption of regular cognitive processes associated with both short-term and long-term COVID-19 infections. Grantees will be tasked with carrying out foundational studies on the effects of cognition, emotion, neural structure, and function related to COVID-19 infections, developing new tools to evaluate cognitive disruptions from COVID-19 and examining the relevance of psychological and psychosocial factors. In addition, the bill stands up a team at the National Academies to study and produce a report on the issue.

We can't bring Brycen and Ben back, but we can ensure that their memories live on. I don't want to lose any more Americans because we weren't bold enough to take on an issue that scares us, an issue we don't fully understand, an issue that is much more common than many in this body recognize. No family should have to endure the tragedy of losing a loved one from COVID-19's cognitive impacts. The *Brycen Gray and Ben Price COVID-19 Cognitive Research Act* ensures we will do everything in our power to find answers and deliver solutions.

Finally, Madam Chair, I ask unanimous consent to include in the record letters of support from both the Gray and Price families.

Ms. LOFGREN. Without objection, those letters will be included.

Mr. GONZALEZ. Thank you. With that, Madam Chair, I urge my colleagues to support H.R. 7180, and I yield back.

Ms. LOFGREN. The gentleman yields back. Thank you for that wonderful statement and for keeping faith with your constituents.

Do other Members wish to be heard on the underlying bill? If not, there—

Ms. STEVENS. Madam Chair, Madam Chair?

Ms. LOFGREN. Who seeks—

Ms. STEVENS. It's Congresswoman Stevens—

Ms. LOFGREN. Ms. Stevens, you are recognized to strike the last word.

Ms. STEVENS. It's Congresswoman Stevens. Is recognized? OK.

Ms. LOFGREN. You're recognized.

Ms. STEVENS. Thank you, Madam Chair. I move to strike the last word.

Ms. LOFGREN. You're recognized.

Ms. STEVENS. Great, thank you.

I wanted to speak in support of my colleague from Ohio's wonderful and important piece of legislation, H.R. 7180, the *Brycen Gray and Ben Price COVID-19 Cognitive Research Act*. And I'd like to take a minute to reflect on the type of legislating that Congressman Gonzalez has brought to this Committee and to the Congress in his time serving the people of Ohio.

This is exactly the type of legislation that produces the best results for the American people. And as we reflect on the tragedy experienced by the Gray and Price families, we can commit to doing better by them and better by our fellow Americans.

And all of us as Committee Members know that the National Science Foundation plays such an important and critical role in the lives of the American people, and it plays an important role in our States if it's with research institutions, with researchers themselves, and for families like the Gray and Price families who have experienced just unimaginable loss. And hearing about these two individuals, Brycen Gray and Ben Price, as delivered by Congressman Gonzalez, their lives before they experienced COVID-19 and the tragedy that brought them down, I think this is absolutely an area where we can invest, we can gain an understanding, and we can prevent further tragedy.

And so not only do I want to commend my colleague, Congressman Gonzalez, for his leadership and voice my support for this important legislation, I also want to recognize the courage of these families for coming forward. That is not always easy. And as a fellow Representative from the Midwest just north of Mr. Gonzalez's district, I know what that takes. I know what this will mean to the people of Michigan's 11th District and in Oakland County, and I know that we will start to come up with better solutions and get some answers here because that is something that the National Science Foundation does and helps us achieve.

So with that, Madam Chair, I yield back and continue to encourage all my colleagues to vote yes on H.R. 7180. Thank you.

Ms. LOFGREN. Thank you. The gentlelady yields back.

Do other Members wish to be heard on the underlying bill?

Seeing no one, no amendments have been pre-filed to this bill. Do Members wish to be recognized to offer an amendment at this time?

Hearing no one, a reporting quorum is present, and I move that the Committee on Science, Space, and Technology report H.R. 7180 to the House with the recommendation that the bill be approved.

All those who are in favor will say aye.

Opposed will say no.

The Chair believes that the ayes have it, and the bill is favorably reported.

Without objection, the motion to reconsider is laid upon the table, and I ask unanimous consent that staff be authorized to make any necessary technical and conforming changes to the bill. And without objection, that is ordered.

Members will have 2 subsequent calendar days in which to submit supplemental, minority, or additional views on this measure.

I want to thank Members for their attendance today, and this will conclude our markup. The Committee is now adjourned.

[Whereupon, at 1:16 p.m., the Committee was adjourned.]

Appendix

ADDITIONAL MATERIAL FOR THE RECORD

LETTERS OF SUPPORT FOR H.R. 7180 FROM THE GRAY AND PRICE FAMILIES

To: Science, Space, and Technology Committee H.R. 7180 - Brycen Gray and Ben Price Covid-19 Cognitive Impact Act

Brycen Gray was loved beyond words can describe. He had such a zest for life, and lived everyday to the fullest. He could walk into a room full of strangers and leave with them all becoming his friends. One day while at a gas station an elderly gentleman fell. He called me asking "mom what should I do?" He called 911 and stayed with the elderly gentleman. He came home and said "mom it was so sad, I couldn't leave him." Brycen had a heart of gold. He was compassionate, honest, respectful, trustworthy, confident and had a great sense of humor. He had plans to become a fireman after high school.

The morning of April 19th, 2021 Brycen received his 2nd Covid vaccine. By that evening he was ill just like after his first vaccine. His symptoms continued that week though; headache, nausea, vomiting, diarrhea, no appetite, everything tasted weird, his arm felt asleep and extreme exhaustion. He reportedly told a friend that week he was feeling out of his mind. Our family is very close, Brycen talked to me about everything. He never had any symptoms mental illness.

He was diagnosed with Covid 19. On Friday April 23, 2021 Brycen did not answer my morning check in text or phone calls. I left work to go home to check on him, planning to take him into his physician. I never would have imagined I would find my Brycen dead. My world stopped, my heart shattered. It is beyond sadness. The anguish brings me to my knees.

The Brycen Gray and Ben Price Covid 19 Cognitive Research Act is imperative to gain insight and knowledge as to how Covid effects the brain. Had we known more we wouldn't have left him alone. One in 3 people suffer from the neurological effects of Covid 19. With more research I believe those numbers may even be greater. We hope with the passing of this bill we can prevent another family from such a devastating loss. Brycen should still be here.

In Hope,

Shawn & Tara Gray

**To: Science, Space, and Technology Committee
H.R. 7180, the Brycen Gray and Ben Price COVID-19 Cognitive Research Act**

From Jennifer Price ~ wife of Ben Price

My husband Ben Price was a vibrant, healthy, strong and hard working 48 year old man. He owned a tractor and power equipment business and had a small family farm in Morris, Illinois. He lived life to the fullest and everyone always described him as a larger than life personality with a smile and laugh that could light up any room!

Ben and I met in college and were married for 24 years. We have two children together ~ our son Jett who is almost 19 years old and has multiple disabilities and our beautiful daughter Maya (My-ah) we adopted from Guatemala as a baby who is 15 years old. Ben was the most compassionate and attentive father. His children were his world and nothing brought him greater pride and joy!

On Friday, February 12, 2021 my husband Ben tested positive for Covid 19. He had just received his first dose of the vaccine four days prior. Within a week he became very sick. His oxygen levels were low and after an emergency room visit he was admitted to the hospital on Friday, February 19, 2021. During his hospital stay he received supplemental oxygen but was never intubated. He also received IV antiviral medication and steroids. On Tuesday, February 23, 2021 he was released from the hospital. When Ben came home he was very weak, tired and still had trouble breathing. We knew it would be a long road ahead to physical recovery but we were not prepared for the neurological toll Covid would have on him.

Within a few days of him getting home from the hospital he began saying how scared he was. He would have me lay next to him and hold my hand and just keep repeating how scared he was. When I would ask what he was scared of he couldn't even say specifics he would just repeat and take deep breaths. His tone of voice was different, his mannerisms were not the same nor the way he typically wore his clothes. He would try to go to the office to do some paperwork but his brain was just not cooperating. I reached out to several of his doctors and they prescribed an anti anxiety medication which he began taking right away but within 2 days he felt it was not helping. On Saturday February 27, 2021 his anxiety, panic and paranoia became much worse. Friends and family were worried and we all were in agreement this was not our Ben and something was terribly wrong. Ben had no history of mental health issues.

Saturday night I made our daughter Maya stay home from being with friends to help try and lift his spirits. We made a dinner he loved and planned to all cuddle on the couch as a family which was his most favorite thing to do. But he would not eat anything and was pacing the house from window to window. At one point he went out the front door

and just stood on the front porch staring at the sky. He would occasionally sit down and would put his head in his hands. He kept saying how much he had to do and that he was behind in farming the fields. Now this was February so he could not do any field work so it was not a rational thought. We finally got him to lay on the couch later in the evening ~ he briefly closed his eyes and seemed to relax for a moment. We went to bed and I prayed he would wake up feeling better.

The next morning Sunday, February 28, 2021 Ben woke up early so I got up with him and made him breakfast. He said he had slept better and was feeling better and it was a great sigh of relief. I immediately texted his Mom and sister that I think we had turned a corner and he was getting better! He wanted to go to the office to do some paperwork and then would come back home to rest. I had told him I would feed our son and then meet him out there to help him. Before I left I noticed via Find My Friends that he was at the other farm which was not a red flag. He had not been doing the farm chores and he hadn't checked on the cows in a few days. So I called him on the phone and asked if he would be heading to the office and that I was on my way and would meet him there to which he said Yes and he sounded good on the phone. About 20 minutes later his Dad was checking the farm as well and noticed his truck but didn't see him. I said he likely was riding in the pasture checking things out so maybe look to see if the RTV was in the shed. When he went in there he found him and he was gone.

Nothing could prepare us for that shock and devastation. I told the first responders right away that he had Covid and had been acting erratically. We knew something was wrong with him but we didn't know what. Later that day I was talking to a friend and explained how off he had been and she asked if I had heard of Covid Psychosis. She sent me three research articles from the NIH about Covid Psychosis and the signs and symptoms. Right then and there we knew what it was and that Ben did not take his life but Covid and the neurological impact of Covid took his life.

I immediately went into action within days of my husbands passing! I called the Doctors who had treated him and they knew nothing about this side effect of Covid. With a simple google search I quickly learned this was happening all over the world and no one was talking about it! I went on social media to share our story which led to countless interviews with WGN, NBC, Fox, and CBS news, and a [change.org](https://www.change.org/p/stop-covid-psychosis) campaign with close to 25,000 signatures. There have also been published articles in The Chicago Tribune, The Daily Iowan, San Francisco Bay Area Mercury News and USA Today. I met with our Illinois Governor JB Pritzker and Congressman Adam Kinzinger.

I shared our story because I feel had I known what this was I would not have let my husband out of my sight until we had proper treatment. I would have known how

unpredictable he was psychologically because of the neurological changes in his brain due to Covid. He had no control over what he was thinking or doing at the time.

I have heard from countless families from across this country who share this very similar and tragic story. Brycen Gray's mom Tara had seen our story and reached out to me. It is comforting to talk with other families but it is not something you wish on anyone. We knew we needed to get action from the highest levels so we could educate and advocate for awareness about the neurological impact of Covid. Congressman Gonzalez started this process for us with the help of Congressman Kinzinger. We feel hopeful that we are taking important steps to get this out across the world so that doctors and families know what to look for and how to treat these very serious neurological side effects from Covid.

We created a foundation the Live in Hope ~ The Ben Price Foundation to honor Ben and his giving heart. On our website is all of our Covid Psychosis advocacy and awareness efforts. www.liveinhope4benprice.org

H.R. 7180, the Brycen Gray and Ben Price COVID-19 Cognitive Research Act is so very important. It will not bring our loved ones back but it will help bring awareness and hopefully prevent more devastation to other families.

From Maya Price: Daughter of Ben Price

My Dad and I were best friends. We did everything together! Covid took my Dad's life and I know that and it helps me cope with this great loss. I think this bill needs to be passed because it is important so others don't lose their loved ones. I saw firsthand how Covid changed my Dad's behavior and he was not the same person. He never left the house without coming to my room to give me kiss good bye. He did not come in my room that morning. Please show your support in moving this bill forward. Thank you!